

## MINIMUM SIGNATURE PROPELLANT

### ABSTRACT

This invention relates to energetic compositions, which offer increased performance in conjunction with a total absence of halogen based oxidizers to eliminate exhaust products, such as hydrogen chloride. The oxidizers of choice are various combinations neat ammonium dinitramide, ammonium dinitramide prills and CL-20, because these oxidizers do not produce halogen containing exhaust products, such as the HCl gas of ammonium perchlorate. The exhaust these novel propellants consist mostly of CO<sub>2</sub>, H<sub>2</sub>O, N<sub>2</sub>, and small amounts of CO. These exhaust species are friendlier and much less hazardous to the environment than those emitted by conventional AP-based propellants. The plasticizers are selected from energetic plasticizers that do not contain halogens, but maintain other desirable properties.